

Support for Human Factors Training: Look Down Under

The Australian Civil Aviation Safety Authority (CASA) has set a new international standard for high-quality human factors training materials



By Dr. Bill Johnson

Dr. Bill Johnson is the FAA Chief Scientific and Technical Advisor for Human Factors in Aircraft Maintenance Systems. Johnson is a member of the Human Factors Advisory Group to the European Aviation Safety Agency (EASA). The group worked with EASA to define human factors aspects of the proposed Safety Management System regulations.

Maintenance organizations are always looking for the “latest and greatest” to improve their basic human factors training, or to supplement recurrent training. Well, look no further. The Australian Civil Aviation Safety Authority (CASA) has set a new international standard for high-quality human factors training materials. CASA calls it *Safety Behaviours – Human Factors for Engineers*.

Over the years I have developed, observed, and delivered a lot of maintenance human factors training throughout the world. I have also advised government and industry about the availability of products and services that can not only meet requirements, but also ensure continuing safety and efficient performance. There is an abundance of quality information available, as evidenced by a Google search using the term “maintenance human factors”. The links lead to many excellent service providers for training delivery. It is difficult to sort through the information to find the product/service that works for your organization. There is something for everyone in the CASA package.

One size does not fit all

Organizational requirements for HF training materials are varied. The variance comes from the differences in organizations’ size, national aviation authority requirements, nature and time of work performed, industrial agreements, stability

of workforce, qualifications of local training personnel, and level of commitment from management. Some organizations try to do as much as possible with computer-based training (CBT). Others have found that the blend of technology-based training and resident training, with an instructor, works best. When tied to a learning management system, the trainee must complete the CBT before participation in the instructor-led training. Some authorities, like Transport

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Canada, insist that CBT is not an acceptable human factors training alternative.

Time is money in aircraft maintenance. Thus, some organizations strive to complete the training as quickly as possible. There are not many requirements for a specified training time. There are many guidelines on the topics that should be included for initial as well as continuing/recurrent training. Organizations should strive for excellence and test to ensure that the training delivers a specified level of competence and, hopefully, lasting behavioral change.

The capability of the organization’s training department affects training

design and delivery. The May 2013 *AMT* magazine covers the newly proposed EASA requirements for a human factors trainer. Small companies may choose to send personnel to off-site classes offered by external training services providers. Such courses likely ensure an experienced trainer who will bring a variety of industry stories to the class. The trade-off with external vs. local trainers is the extent to which the content can be matched to organizational challenges and culture. Many human factors issues are common to the entire industry. Thus, most externally provided information is relevant.

What's on training organizations' HF wish list?

HF training has been around for nearly 20 years. Therefore the wish list is asking for fresh ideas, new graphical depictions, new event scenarios, and improved multimedia. Concepts like PEAR, Dirty Dozen, and Swiss Cheese still have high value, but trainers and



learners want the tested concepts to look new. Worn-out graphical depictions from the '90s are insufficient. The same holds true for videos. The Canadian Defense film, about the C-130 and the Dirty Dozen, has a great message, but can an organization expect today's learners/gamers to accept old-school edutainment?

There are newer videos. Some are free on YouTube and others at a fair and reasonable cost. Some organizations, mostly large ones, have produced videos focusing on local maintenance events. Delta Air Lines and Lufthansa Technik, for example, have produced effective videos. However, it takes a deep pocket (\$10-

Figure 1: The CASA Safety Behaviours: Human Factors for Engineers Kit

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Figure 2: Improving the PEAR model




15K USD for every finished quality minute) and a high level of commitment to produce quality video within an airline training organization. I suggest that such

endeavors are for video production companies, with appropriate HF technical support.

Human factors trainers use accident or event sce-

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